

Pre Cal 5 1 and 6 1 Unit Circle , Revolution, Arc Length

Lesson 220 | Precalculus | Unit circle and exact values • Radians, reference and coterminal angles • Arc length, sectors and angular speed

<https://www.youtube.com/watch?v=EjAMXtcqy7k>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Find exact $\sin(-450^\circ)$ and $\cos(-450^\circ)$ using the unit circle. Give the coterminal angle in $[0^\circ, 360^\circ)$.

02

For angle -2670° , find the radian measure, the coterminal angle in $[0^\circ, 360^\circ)$, and its reference angle (use 0° or 90° for axis angles).

03

A circle has radius 14 cm and central angle $7\pi/6$ radians. Find the corresponding arc length and sector area (allow swept sectors greater than a full turn).

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04

Find exact $\sin(-300^\circ)$ and $\cos(-300^\circ)$ using the unit circle. Give the coterminal angle in $[0^\circ, 360^\circ)$.

05

For angle -720° , find the radian measure, the coterminal angle in $[0^\circ, 360^\circ)$, and its reference angle (use 0° or 90° for axis angles).

06

A circle has radius 3 cm and central angle $7\pi/13$ radians. Find the corresponding arc length and sector area (allow swept sectors greater than a full turn).

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01

Find exact $\sin(-450^\circ)$ and $\cos(-450^\circ)$ using the unit circle. Give the coterminal angle in $[0^\circ, 360^\circ)$.

Coterminal angle 270° . Coordinates $(\cos \theta, \sin \theta) = (0, -1)$; the first is cosine and the second is sine.

02

For angle -2670° , find the radian measure, the coterminal angle in $[0^\circ, 360^\circ)$, and its reference angle (use 0° or 90° for axis angles).

Radians = $-89/6\pi$. Coterminal angle 210° . Reference angle 30° .

03

A circle has radius 14 cm and central angle $7\pi/6$ radians. Find the corresponding arc length and sector area (allow swept sectors greater than a full turn).

$s = r\theta = 49/3\pi$ cm. $A = (1/2)r^2\theta = 343/3\pi$ cm².

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04

Find exact $\sin(-300^\circ)$ and $\cos(-300^\circ)$ using the unit circle. Give the coterminal angle in $[0^\circ, 360^\circ)$.

Coterminal angle 60° . Coordinates $(\cos \theta, \sin \theta) = (1/2, \sqrt{3}/2)$; the first is cosine and the second is sine.

05

For angle -720° , find the radian measure, the coterminal angle in $[0^\circ, 360^\circ)$, and its reference angle (use 0° or 90° for axis angles).

Radians = -4π . Coterminal angle 0° . Reference angle 0° .

06

A circle has radius 3 cm and central angle $7\pi/13$ radians. Find the corresponding arc length and sector area (allow swept sectors greater than a full turn).

$s = r\theta = 21/13\pi$ cm. $A = (1/2)r^2\theta = 63/26\pi$ cm².